



ALIGNMENT OF EARLY CHILDHOOD CARE AND EDUCATION CENTRES WITH DEVELOPMENTALLY APPROPRIATE PRACTICE PRINCIPLES: AN ASSESSMENT

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ABSTRACT

This study evaluates the alignment of 150 Anganwadi centres in Ganjam District, Odisha, with Developmentally Appropriate Practice (DAP) principles. Using an observation schedule, the research assesses infrastructure, resources, and teaching practices to identify challenges and opportunities in DAP implementation. Findings reveal significant infrastructure deficits, particularly the absence of dedicated buildings, which impede the creation of safe and stimulating learning environments. Despite these challenges, centres with adequate resources demonstrated effective DAP alignment, supported by strong parental and community involvement. The study underscores the need for continuous professional development for Anganwadi workers and policy reforms to increase funding and support for Early Childhood Care and Education (ECCE) programs. Cultural integration and tailored educational strategies emerge as essential for creating relevant and engaging learning experiences. The research concludes with recommendations to enhance DAP practices, aiming to improve holistic child development and educational outcomes in the region.

KEYWORDS: Anganwadi; Anganwadi Workes(AWW); Developmentally Appropriate Practice(DAP); Early Childhood Care and Education(ECCE)

INTRODUCTION

Developmentally Appropriate Practice (DAP) is a cornerstone in early childhood education, emphasizing educational strategies that cater to the developmental stages of young children. The alignment of Early Childhood Care and Education (ECCE) centres with DAP principles is critical for ensuring that children receive a nurturing, engaging, and effective learning experience. This article examines the extent to which ECCE centres in Ganjam District, Odisha, align with DAP principles, identifying key challenges and opportunities in this context.

Concept of Developmentally Appropriate Practice (DAP)

Developmentally Appropriate Practice is defined by three core principles: understanding child development and learning, recognizing the individuality of each child, and considering the social and cultural context (Copple & Bredekamp, 2009). DAP advocates for creating learning environments that meet children where they are and help them reach challenging yet achievable goals. This approach promotes holistic development, encompassing cognitive, social, emotional, and physical growth (Bredekamp, 2014).

1. Knowledge of Child Development and Learning: Understanding the typical developmental milestones of children at various ages allows educators to design activities that are appropriate for their developmental stage. This ensures that children are neither bored with tasks that are too easy nor frustrated with tasks that are too difficult (NAEYC, 2020).
2. Knowledge of Individual Children Recognizing

individual differences in children's development and learning is crucial. Teachers must tailor their practices to the unique strengths, needs, and interests of each child, facilitating more personalized and effective learning experiences (Gestwicki, 2016).

3. Knowledge of Social and Cultural Contexts: Considering the social and cultural backgrounds of children helps create a more inclusive and relevant learning environment. Educators must integrate culturally relevant practices and materials to validate children's backgrounds and promote a sense of belonging (Rao & Kaul, 2018).

Importance of DAP in Early Childhood Education

Implementing DAP is vital for fostering a nurturing and effective educational environment. Research consistently shows that children in DAP-oriented programs exhibit better academic performance, higher self-esteem, and more positive attitudes toward learning (Mashburn et al., 2008). DAP supports cognitive development and promotes social and emotional well-being, which are critical for long-term success (Shonkoff & Phillips, 2000). Moreover, DAP encourages inclusive education by acknowledging and valuing children's diverse backgrounds. This approach helps create supportive learning environments where all children can thrive, regardless of their developmental stage or cultural background (Gestwicki, 2016). By focusing on the whole child, DAP fosters comprehensive growth and prepares children for future educational and life challenges (Bredekamp, 2014).

Review of selected previous studies on DAP

Globally, numerous studies have highlighted the benefits and challenges of implementing DAP. In the United States, research has shown that classrooms adhering to DAP principles have higher levels of child engagement and improved learning outcomes (Mashburn et al., 2008). Similarly, in countries like Finland, where early childhood education policies strongly support DAP, children exhibit high well-being and academic success (Pakarinen et al., 2010). In India, studies on DAP implementation have primarily focused on Anganwadi centres, part of the Integrated Child Development Services (ICDS) scheme. These studies have identified several contextual challenges, such as inadequate educator training, limited resources, and cultural factors influencing educational practices (Kaul & Sankar, 2009; Rao & Kaul, 2018). Despite these challenges, evidence suggests that when DAP is effectively implemented, it can significantly improve children's development and school readiness (UNICEF, 2019).

Specific Challenges and Opportunities in the Indian Context

The Indian context presents unique challenges and opportunities for DAP implementation. One major issue is the need for more infrastructure and resources in many ECCE centres, particularly in rural areas like the Ganjam district of Odisha. Many Anganwadi centres operate without dedicated buildings, limiting their ability to provide a safe and stimulating learning environment (Sahu et al., 2020). Additionally, cultural factors play a significant role in shaping educational practices. Traditional views on education and child-rearing may conflict with DAP principles, requiring educators to thoughtfully navigate and integrate these differences (Rao & Kaul, 2018).

Despite these challenges, significant opportunities exist to enhance DAP implementation in India. Strengthening professional development for Anganwadi workers, revising curricula to align with DAP principles, and fostering greater parental and community involvement can contribute to more effective early childhood education practices (Kaul & Sankar, 2009). Policy changes to increase funding and support for ECCE programs are also critical for overcoming barriers to DAP implementation (UNICEF, 2019).

Gaps in the Literature

While there is a growing body of research on DAP in early childhood education, several gaps still need to be addressed. One significant gap is the lack of longitudinal studies that track the long-term outcomes of DAP implementation in various contexts. Additionally, more research is needed to understand how DAP can be adapted to different cultural settings, particularly in countries like India, where traditional practices and modern educational theories may conflict. There is also a need for more studies that explore the perspectives of educators, parents, and children on DAP to provide a more comprehensive understanding of its implementation and impact (Rao & Kaul, 2018). Finally, research that evaluates the effectiveness of specific interventions to improve DAP practices in resource-constrained environments would be valuable for informing policy and practice.

Objectives of the Study

The objectives of the study on the alignment of Anganwadi centres with Developmentally Appropriate Practice (DAP) principles in Ganjam District, Odisha, are stated as follows:

1. To assess the adequacy of physical infrastructure and resources available at Anganwadi centres and their impact on implementing DAP principles.
2. To examine the teaching practices employed by Anganwadi workers, focusing on the quality of teacher-child interactions and the incorporation of child-led activities.
3. Evaluate the structure and variety of daily routines and activities provided to children in Anganwadi centres.
4. To investigate the level of parental and community involvement in the functioning of Anganwadi centres and its effect on implementing DAP principles.
5. The purpose of this study is to identify the key challenges faced by Anganwadi centres in aligning with DAP principles and to provide recommendations for policy changes and improvements.

RESEARCH QUESTIONS

Based on the objectives, the following research questions are posed about the dimensions of the study.

Infrastructure and Resources:

1. What is the current physical infrastructure and resources in Anganwadi centres in Ganjam District?
2. How do infrastructure and resource availability affect the implementation of DAP principles in these centres?

Teaching Practices:

3. What are the prevalent teaching practices among Anganwadi workers in the district?
4. How do these practices align with DAP principles, particularly in terms of teacher-child interactions and opportunities for child-led exploration?

Daily Routines and Activities:

5. What types of daily routines and activities are provided in Anganwadi centres?
6. How do these routines and activities align with the developmental needs of the children?

Parental and Community Involvement:

7. To what extent are parents and the community involved in the activities and decision-making processes of Anganwadi centres?
8. How does parental and community involvement influence the implementation of DAP principles?

Challenges and Recommendations:

9. What are the primary challenges faced by Anganwadi centres in implementing DAP principles?
10. What recommendations can be made to improve the alignment of Anganwadi centres with DAP principles, considering the identified challenges and existing policy constraints?

These objectives and questions guide the study in assessing

current practices and identifying areas for improvement in Early Childhood Care and Education (ECCE) centres in Ganjam District, Odisha.

Definition of the key terms:

Anganwadi: Anganwadi predominantly serves children aged 0-6. While they form an integral part of the Indian public healthcare system, their contribution extends far beyond healthcare, substantially impacting children's early education and holistic development.

Anganwadi Workers (AWW): Anganwadi Workers are usually local women selected from the community they serve. They are considered community health workers and are an integral part of the primary healthcare system in India. The Anganwadi system is a key component of India's efforts to improve maternal and Child health, reduce malnutrition, and enhance Early Childhood Development.

Developmentally Appropriate Practice (DAP): Developmentally Appropriate Practices for preschool children refer to teaching and caregiving practices aligned with young children's developmental stages and individual needs. DAP is based on the understanding that child learns best when the learning environment, curriculum, and interactions are tailored to their unique characteristics and abilities.

Early Childhood Care and Education (ECCE): In the context of India, ECCE stands for Early Childhood Care and Education. It refers to the holistic development and education of children usually in the age group of 0 to 6 years. It encompasses activities and experiences that support a child's physical, cognitive, emotional, and social development during the crucial years of life. The aim is to provide a strong foundation for children before they enter the formal schooling.

METHODOLOGY

Design: This study employs a survey method to evaluate the alignment of Anganwadi centres in Ganjam District, Odisha, with Developmentally Appropriate Practice (DAP) principles. The research design integrates both quantitative and qualitative data collection methods to provide a comprehensive understanding of the current practices and challenges faced by these centres.

Sampling: The study was conducted in 150 Anganwadi centres selected through stratified random sampling to ensure representation across different geographic locations within Ganjam District. This sampling method allowed for a diverse range of centres to be included, ensuring that the findings are generalizable to the broader population of ECCE centres in the district.

Tools:

An Observation Schedule was developed by the researcher to assess various aspects of the Anganwadi centres, including infrastructure, resources, daily routines, teaching practices, and parental and community involvement. The checklist included

the following categories:

1. Physical Environment: Assessment of indoor and outdoor spaces, availability of developmentally appropriate materials, and safety measures.
2. Daily Routines: Evaluation of morning routines, learning activities, outdoor playtime, and transitions between activities.
3. Teaching Practices: Observation of interactions between children and caregivers, communication styles, and opportunities for child-led exploration.
4. Parental and Community Involvement: Evidence of communication with parents, involvement in children's activities, and community outreach initiatives.

The observation session lasted approximately two hours, during which time the researchers gathered detailed data on the centres' daily operations.

To gain deeper insights into implementing DAP principles, semi-structured interviews were conducted with Anganwadi workers, supervisors, and parents. The interview questions were designed to explore the participants' perceptions of current practices, challenges faced, and suggestions for improvement. Each interview lasted 20 to 30 minutes and was audio-recorded with the participant's consent.

Pilot Study

A pilot study was conducted in 10 Anganwadi centres to test the observation schedule and interview protocols. The pilot study aimed to ensure the validity and reliability of the data collection instruments and identify any potential issues that needed to be addressed before the full-scale study.

Pilot Study Findings

The pilot study revealed several important insights:

- **Validity and Reliability:** The observation schedule and interview protocols were found to be valid and reliable tools for assessing the alignment of Anganwadi centres with DAP principles.
- **Feasibility:** The data collection methods were feasible and practical for use in the field, with minor adjustments needed to improve clarity and ease of use.
- **Initial Trends:** Preliminary data from the pilot study indicated significant variability in infrastructure quality and teaching practices across the centres.

Reliability and Validity Scores

The reliability of the observation schedule was assessed using Cronbach's alpha, which measures internal consistency. The pilot study yielded a Cronbach's alpha of 0.85, indicating high reliability. Validity was assessed through content validity and construct validity. Content validity was ensured through expert reviews of the observation schedule, while construct validity was supported by significant correlations between observed practices and interview responses. The content validity index (CVI) was calculated at 0.88, indicating a high level of agreement among experts that the items were relevant and representative of DAP principles.

Based on these findings, minor revisions were made to the observation schedule and interview protocols to enhance clarity and ensure comprehensive data collection.

Data Analysis

The data collected through the observation schedule and interviews were analyzed using both quantitative and qualitative methods.

Quantitative Analysis

Data from the observation schedule were entered into a statistical software package (SPSS) for analysis. Descriptive statistics, including means, frequencies, and percentages, were calculated to provide an overview of the current practices in the Anganwadi centres. Inferential statistics, such as chi-square tests, were used to identify significant differences between centres in different geographic locations.

The quantitative analysis for this study involved evaluating the alignment of 150 Anganwadi centres in Ganjam District, Odisha, with Developmentally Appropriate Practice (DAP) principles. Data were collected using an observation schedule focusing on various domains such as infrastructure, resources, teaching practices, and parental and community involvement. This analysis aims to quantify the extent of DAP implementation and identify significant patterns and correlations.

Data Collection

The observation schedule used for data collection included a checklist of items across different categories. Each item was scored on a scale from 1 to 5, where 1 indicated poor alignment with DAP principles and 5 indicated excellent alignment. The total score for each centre was computed by summing the scores of all items in the observation schedule.

Results

Infrastructure and Resources

The scores for infrastructure and resources varied significantly across the centres. The mean score for infrastructure was 2.3, indicating a generally low level of adequacy in physical resources and facilities.

Category	Mean Score	Standard Deviation
Indoor Space	2.1	0.8
Outdoor Space	2.4	1.0
Availability of Materials	2.5	0.9
Safety Measures	2.3	0.7

Table 1: Assessment of Learning Environment

Teaching Practices

Teaching practices were observed to be moderately aligned with DAP principles. The mean score for teaching practices was 3.5, reflecting variability in the quality of interactions and instructional strategies.

Category	Mean Score	Standard Deviation
Teacher-Child Interactions	3.6	0.7

Child-Led Activities	3.4	0.8
Engagement in Activities	3.5	0.7

Table 2: Assessment of Classroom Dynamics

Daily Routines and Activities

Daily routines and activities also showed moderate alignment with DAP principles. The mean score for this category was 3.2.

Category	Mean Score	Standard Deviation
Morning Routines	3.1	0.8
Learning Activities	3.4	0.9
Outdoor Playtime	3.0	0.8
Transition Times	3.3	0.7

Table 3: Mean Scores and Standard Deviations of Daily Routine Categories

Parental and Community Involvement

Parental and community involvement had the highest mean score at 4.0, indicating strong engagement and support in many centres.

Category	Mean Score	Standard Deviation
Parental Engagement	4.1	0.6
Community Outreach	3.9	0.7
Support for Activities	4.0	0.6

Table 4: Mean Scores and Standard Deviations of Engagement Factors

Correlation Analysis

A Pearson correlation analysis was conducted to explore the relationships between infrastructure quality and teaching practices, daily routines, and parental involvement. The results indicated significant positive correlations between infrastructure quality and teaching practices ($r = 0.45$, $p < 0.01$), daily routines ($r = 0.50$, $p < 0.01$), and parental involvement ($r = 0.35$, $p < 0.05$).

Regression Analysis

A multiple regression analysis was performed to determine the predictors of overall DAP alignment. Infrastructure quality, teaching practices, and parental involvement were entered as independent variables. The regression model was significant ($F(3, 146) = 25.42$, $p < 0.01$) with an R^2 value of 0.34, indicating that 34% of the variance in DAP alignment could be explained.

Predictor Variable	Beta Coefficient	t-value	p-value
Infrastructure Quality	0.38	4.82	<0.01
Teaching Practices	0.31	3.78	<0.01
Parental Involvement	0.24	2.89	<0.05

Table 5: Predictors of Academic Performance

Theme	Mean Score	Standard Deviation	Key Observations
Infrastructure and Resources	2.3	0.8	Inadequate facilities, lack of dedicated buildings, insufficient safety measures

Teaching Practices	3.5	0.7	Generally positive interactions, variability in instructional strategies
Daily Routines and Activities	3.2	0.8	Structured routines in well-equipped centres, varied activities where possible.
Parental and Community Involvement	4.0	0.6	High levels of engagement and support from parents and community.

Table 6: Summary of Quantitative Score

Conclusion

The quantitative analysis reveals significant disparities in implementing DAP principles across Anganwadi centres in Ganjam District. Infrastructure deficits, particularly the absence of dedicated buildings, pose major challenges. Centres with better infrastructure and strong parental involvement show more effective DAP alignment. The findings underscore the need for policy reforms, increased funding, and continuous professional development to enhance the quality of the region's Early Childhood Care and Education (ECCE) programs.

Qualitative Analysis of the data

The interview data were transcribed verbatim and analyzed using thematic analysis. This involved coding the data to identify common themes and patterns related to implementing DAP principles. Thematic analysis allowed for an in-depth understanding of the participants' experiences and perspectives, providing valuable context to the quantitative findings.

The qualitative analysis was conducted on the data collected from semi-structured interviews and observations at 150 Anganwadi centres in Ganjam District, Odisha. The analysis focused on various themes related to the implementation of Developmentally Appropriate Practices (DAP), including infrastructure, daily routines, teaching practices, and community involvement.

Data Coding and Thematic Analysis

The qualitative data were analyzed using thematic analysis. The interview transcripts and observation notes were coded to identify recurring themes and patterns. The key themes identified included:

1. Infrastructure and Resources
2. Teaching Practices
3. Daily Routines and Activities
4. Parental and Community Involvement
5. Challenges and Recommendations

Each theme was further divided into sub-themes to provide a detailed understanding of the DAP implementation in the Anganwadi centres.

Key Themes and Sub-themes

1. Infrastructure and Resources

- Availability of Dedicated Buildings: Many centres lacked their own buildings, resulting in inadequate space and facilities.
- Safety Measures: Centres with dedicated buildings had better safety measures in place.

- Developmentally Appropriate Materials: Centres with more resources had a wider range of appropriate materials.

2. Teaching Practices

- Teacher-Child Interactions: Positive and supportive interactions were observed in centres with better-trained staff.
- Child-Led Activities: Opportunities for child-led exploration were more frequent in well-resourced centres.

3. Daily Routines and Activities

- Structured Routines: Centres with better infrastructure had more structured daily routines.
- Variety of Activities: A diverse range of activities was observed in centres with adequate resources.

4. Parental and Community Involvement

- Parental Engagement: High levels of parental involvement were noted in centres with strong community ties.
- Community Outreach: Centres engaged in community outreach had better support and resources.

5. Challenges and Recommendations

- Resource Constraints: Limited resources were a significant challenge across many centres.
- Cultural Factors: Cultural factors influenced the implementation of DAP.
- Policy Constraints: Policy limitations affected the quality of DAP practices.

Example Quotes

- Infrastructure: "We struggle with space and basic facilities as we don't have our own building. This limits the activities we can do with the children." (Anganwadi worker)
- Teaching Practices: "Training has helped us interact better with the children, making our sessions more effective and enjoyable for them." (Anganwadi worker)
- Parental Involvement: "Parents are very supportive and often participate in the activities, which has a positive impact on the children." (Supervisor)

To quantify the qualitative data, each theme was assigned a score based on the frequency and intensity of observations and interview responses. The scoring was done on a scale of 1 to 5, with 5 indicating the highest level of alignment with DAP principles.

Theme	Score	Key Observations
Infrastructure and Resources	2.5	Lack of dedicated buildings, inadequate materials, safety issues in some centres.
Teaching Practices	3.5	Positive interactions in well-resourced centres, need for more training.

Daily Routines and Activities	3.0	Varied routines and activities, structured programs in better-equipped centres.
Parental and Community Involvement	4.0	High levels of involvement and support from parents and community in many centres.
Challenges and Recommendations	3.0	Resource constraints and policy limitations, with clear areas for potential improvement.

Table 7: Summary of Qualitative Scores

The qualitative analysis highlights significant disparities in implementing DAP principles across Anganwadi centres in Ganjam District. Infrastructure deficits, particularly the absence of dedicated buildings, pose major challenges. However, centres with better resources and strong community involvement show promising alignment with DAP principles. The findings underscore the need for policy reforms, increased funding, and continuous professional development to enhance the quality of the region's Early Childhood Care and Education (ECCE) programs.

Ethical Considerations

Ethical approval for the study was obtained from the Institutional Review Board (IRB) of the conducting university. Informed consent was obtained from all participants, and measures were taken to ensure confidentiality and anonymity. Participants were informed of their right to withdraw from the study at any time without any consequences.

DISCUSSION

The findings highlight the critical role of infrastructure, resources, and professional development in implementing DAP in ECCE centres. Many Anganwadi centers' lack of dedicated buildings and developmentally appropriate materials underscores the need for increased funding and support for ECCE programs in India. Professional development for Anganwadi workers is essential to enhance their understanding and implementation of DAP principles.

Parental and community involvement emerged as a key factor in successful DAP implementation. Engaging parents and community members in children's education helps create a more supportive and inclusive learning environment. Educators must be trained to integrate cultural practices with DAP principles to create relevant and meaningful learning experiences for children.

Policy constraints, including limited funding and support for ECCE programs, pose significant challenges to DAP implementation. Policy reforms aimed at increasing investment in ECCE, improving infrastructure, and supporting professional development for educators are crucial for enhancing the quality of early childhood education in India.

CONCLUSION

The alignment of ECCE centres with DAP principles is essential for promoting holistic development and ensuring that children receive a high-quality early education. This study highlights the importance of adequate infrastructure, resources,

professional development, and community involvement in implementing DAP in Anganwadi centres in Ganjam District, Odisha. Addressing the identified challenges through increased funding, policy reforms, and cultural integration can significantly enhance the effectiveness of DAP practices in early childhood education. Future research should focus on longitudinal studies and the perspectives of educators, parents, and children to provide a more comprehensive understanding of DAP implementation and its impact on child development.

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